

## The A B C. Road Making.

In sections of the United States where there is less than twenty-five inches of rainfall there is no road problem worthy of very serious consideration. Road making in those sections means reducing the grades, constructing bridges over streams, and drainage where roads cross sloughs which carry an abnormal supply of water for that section. In heavy clay soils such as southern Iowa and northern Missouri, and in deep, rich, heavy soils such as central and northern Iowa and central Illinois and Indiana, where the rainfall varies from thirty to forty inches, and over, there will always be, until the road problem is solved in a practical way, mud and misery at certain seasons of the year; and, fortunately, under these conditions mud and misery mean also money. In short, deep, rich soils, weathering, or alluvial, with a rainfall of twenty-five inches, always bring to their possessors a very serious road problem.

The common cause of bad roads in the prairie country with a normal rainfall is water uncontrolled. Hence the first consideration is drainage, either side drainage or under drainage, as circumstances may require. When nature withholds rainfall, as in periods of prolonged drouth, we have no bad roads perpetually roofed would be always good, barring perhaps dust. Hence no matter what kind of road you propose to make in humid fertile sections, the first consideration is drainage. Ordinarily side drainage is sufficient, the depth of the drains on the sides being determined by the fall available and by the amount of water that naturally flows in from the rolling lands adjoining.

In Iowa and Missouri and some parts of Illinois the water that gives the most trouble is that which seeps out on the hillsides. This seepage is caused by the existence of a bed of clay through which the water cannot readily pass and hence must push out laterally; and if this occurs in the road we have a road problem. The remedy for this is tile drains laid far enough above the seepy places to carry off the water that seeps in and turn it into the ditch. Fortunately, the dirt removed from the side ditch, if properly handled, elevates the road bed. There are cases where tile under the road bed may be practical, but they are rare. When they are used it is not for the purpose of draining the surface of the road, but to remove the water under the road bed to the depth of three feet in order to prevent the movement of water upwards by capillary action, and the breaking up of the road in time of frost.

Proper drainage and grading are absolutely essential, no matter what kind of surface covering is to be used. There are sections in Illinois and Iowa where surface covering is so cheap and so well adapted to the purpose that hard roads are practicable. They are not practicable in large sections of Illinois, Indiana, Missouri, and Iowa, for the reason that neither gravel nor rock are available. But no matter how available or how cheap this surfacing material may be, it is absolutely useless to undertake to apply it until the water has been taken care of and the road graded up.

Farmers in these sections are therefore compelled to make the very best use they can of the common clay or dirt of the roadside. We say "clay or dirt," not "soil," because soil—agricultural soil, soil in which you can grow great crops of corn—is not only of no use but an absolute damage to any road bed ever made. Fortunately, most of the roads in the territory mentioned have been laid out and traveled for thirty, forty, fifty, and sixty years. This travel has exhausted the humus and left a road bed of the clay peculiar to the country. The heavier the clay and the less the amount of vegetable matter the more easy it is to make a good road bed by the method which we will hereafter describe.

The best method yet devised for keeping roads of this character in good condition, better condition than farmers ever dreamed of, is the road drag. By the drag we do not mean a harrow, but what has come to be known as the road drag, which can be made very easily and in various ways. The best form of which we have any knowledge is made from white cedar or tamarack fence posts eight inches thick and about seven feet long. Where this is not available, any kind of soft wood will answer—box elder

or cottonwood, or, where this is not available, ordinary two-inch pine planks or any other light wood.

Where a post or telephone pole or log is used, it should be split in two, so as to make two halves the length of the post. These should be placed on edge thirty inches apart, held together with iron rods or pinned together securely with some hard wood. Five feet of the front piece, at the right-hand side looking toward the team, should be faced with a piece of iron or steel, which should not project more than one-eighth or one-quarter inch at most below the edge. Attach a log chain, and hitch a team of heavy, slow-moving horses to this in such a way as to give the drag an angle of forty five degrees, put on a couple of boards on the cross pieces, and get on on yourself. You are then ready for business.

Begin in front of your own house. Go to your neighbor's gate in the direction of town. Do this when the roads are muddy. Pass along one rut on going one way, and come back along the other. Then do it again, and quit for that day. What have you done? You have filled up the ruts, smoothed down the rough places, allowed the water to run off into the ditch, in which, as stated above, there must be sufficient fall to carry it on. You have allowed the sun to shine on this smooth road and the winds to blow over it, with the result that it will dry off twenty-four hours before a piece of similar road not treated. Teams passing over it will compact it, roughing it up some of course. Wait till the next rain, and when the road begins to dry, go over it again; and so on after every rain during the summer season, and especially during the fall and during the spring when the surface of the road has been frozen and thaws off to a depth of half an inch. This is all there is to the road drag.

No man will believe how effective it is until he tries it, nor will he fully appreciate its efficiency until he tries it year after year. There are some things however, which it will not do. It will not make a good road out of sand, for the reason that sand does not make stiff mud; neither will it make a good road where the soil is peaty and does not have clay enough to pack it together. It will not work among stones or stumps, nor will it work effectively where the roads are covered with grass. It will, however, prevent grass from growing in the road bed.

We speak in this not from theory but from a good deal of observation and experience. A little over a year ago we became thoroughly convinced of the efficiency of this drag, which, by the way, is not a thing newly discovered. It was used in certain counties in New York state in 1837. It was tried in northwestern Iowa twenty years ago, but failed because the roads had not been graded up nor the grass removed. We persuaded the North-western Railroad Company in Iowa, which has lines through the very muddiest portions of the state, to start a special train, visit some fifteen counties, make a drag on the spot, and give a demonstration of its efficiency. So thoroughly converted were its superintendents and other officials, as well as the supervisors of the various counties, that there are now thousands of farmers using this drag. Wherever it has been used according to directions the result has been better roads than the most enthusiastic farmers ever dreamed to be within human possibility.

The philosophy of it is exceedingly simple, and in harmony with the theories of all good road builders, no matter what the material used. All road engineers agree that the first thing is drainage, the second grading. They further agree that the road bed should have the minimum of vegetable matter, and be in its character as different as possible from the cultivated field. The cultivated field requires humus in large quantities in order to keep the soil in the best possible physical condition or growing crops. The highway requires the minimum of humus material in order that it may be in the best possible physical condition for travel. All good road builders agree that the material placed upon the road should be as uniform as possible in character, and furthermore, that it should be put on in layers and a little at a time.

On a road traveled for thirty or forty years the humus is practically exhausted. You could not grow corn on it if you tried to do so.

The drag will fill up ruts and smooth it so as to let the water run off, the sun to shine on it, and the winds to blow over it, and carries a small amount of dirt thoroughly mixed together and puddled into the middle of the road, thus maintaining and increasing the grade. If this is kept up from year to year the covering of puddled dirt will become so thick that the winter rains and snows will penetrate it but two or three inches, and hence there will be no frost to come out, no "breaking up" of the road in the spring. There will be no cold storage of water under the road bed, and hence there can be no upheaval of the roads, for this upheaval, or what is called the "going out of the frost," is simply the result of cold storage of water during the winter season.

We have gone to some trouble to ascertain the cost of maintaining by the use of the road drag roads that have been previously drained, graded, and traveled. The annual cost of making the road we have, except asphalt, during eight and or nine months of the year is from three to five dollars per mile, provided the dragging is done by farmers along their own farms, allowing them from thirty to fifty cents per hour for the time actually engaged. This is a mere fraction of the cost of gravel or macadam road, and is even less than the cost of maintaining these roads after you have secured them. The cost, as shown by government investigations of maintaining the macadam roads in the eastern states is from ten dollars a mile upwards. The cost of maintaining Irish roads is from thirty to one hundred and five dollars per mile. This was a great surprise, but the data furnished is from the contracts actually made by the county authorities for the maintaining of these roads on a five-year contract. The more a country is subject to prolonged drouths the greater is the difficulty of maintaining macadamized roads, for the reason that long continued dry weather during the summer season shrinks the binding from the rock, the wind blows out the finer portions, and the result is what is called by our government engineers a "ravelled" road, that is, a road covered with loose stones, which must be removed before it can be made fit for travel. Therefore, except perhaps in the vicinity of large cities, where there is a heavy hauling and where it is possible to keep the macadamized road made as above described is not only the cheapest road possible but the best.

There are many things about the use of the drag which cannot be taught by tongue or pen; they must be learned by practical experience. In this, however, it does not differ from anything else worth having. Even the precepts of religion are entirely useless to any man unless he puts them into practice. The same may be said of an agricultural education. The same may also be said of the art of farming or any other profession known among men. No man can possibly realize the benefits of this method until he actually makes his drag and then uses it, and uses it from year to year. Wherever this method is adopted provision should be made by law that the farmer who does the work on the roads shall receive compensation.

The article in this issue entitled "The A. B. C. of Road Making," was suggested by our friend Mr. E. Bartow Jones. It is taken from Wallace Farmer, probably the best farm paper in America.

It is a practical idea—farmers read it. Road overseers read it. We would call the special attention of the County Court to it.

This is no experiment—it has been tried and has given good results—it is inexpensive a feature which especially recommends it. Every farmer in this county should have Wallace Farmer and the Register in his home.

A Chicago woman has solved the problem of loafing husbands. Her old man could not be begged, coaxed or driven to work, so she bought a graphophone with a single record which played all day "Everybody works but father, he sits 'round all day." In a few days it "got to his nerves" and he struck out and got a permanent job. Seems to be entirely cured.

Every young girl should, if practicable have no allowance. At first it should be very small, just sufficient to cover her little expenses. As she grows older it should be annually increased.

## HEROES.

Composed by Mrs. E. C. Winger, Point Pleasant, W. Va.

When they say the heroes' coming,  
Then you look for beating drums,  
And for flags and banners flying;  
As on mounted steeds he comes,  
Just one moment on the impulse,  
When the call for volunteers  
Cause a rash dash into danger,  
Without counting cost or fears,  
These sometimes are made by cheering,  
Made in one brief moment great.  
In the crowd stand ragged women,  
Daily strugglers for their bread;  
On their backs they've carried burdens  
That their children might be fed.  
They, too, come to see the hero,  
Leading children by their side;  
To their breasts they clasp the babies,  
Nation's wealth and mothers' pride.  
These neglected ones are heroes  
Made in life's long battles great.  
Many patient, struggling mothers,  
Many faithful, toiling men,  
Have through weary years of conflict,  
Gained the victory in the end.  
No one shouts when they are passing;  
No one cheers when duty's done.  
No one knows but God how hard 'tis,  
And how dearly victory's won.  
No one knows that they are heroes;  
No one knows that they are great.

## Women too Lenient

"We want the women of this country to set a higher standard of respectability for men," declared Judge William M. McEwen in an address before the Chicago Woman's club the other day. "At present the women are too lenient toward and too forgiving of bad conduct."

Judge McEwen was discussing the possibilities of reducing crime in the United States, and his suggestion that the men be held to a stricter code of morals was greeted with applause by the club women.

"The crime we have most to fear," said the speaker, "comes from morbid conditions in men and boys who have been deprived of drink, vice and drugs. We must look to check them by working among the younger generation. Every father should make a companion and a confidant of his boy in order that the information about the functions and duties of life, which he acquired shall not come from polluted sources."

We saw in a newspaper the other day that the stiffening necessary for everyday life is not wishbone, but backbone.

## FROM BIRTH TO OLD AGE

Life is a constant fight against the danger of disease, and he holds his own the best who keeps his body and its functions in the best working trim.

There are times in every life when Nature gratefully accepts a little aid. She does not want a whipping up for that is invariably followed by depression. In most cases a tonic and alterative properly compounded will aid in digestion, assimilation and reconstruction of tissue and reducing waste of vital nerve forces.

It is not an alcoholic stimulant—just a vegetable tonic. Meeting these needs and conditions Dr. Pierce's Golden Medical Discovery has been in successful use these forty years and has accumulated a record of cures unequalled in the history of medicine. It is composed of non-toxic, glyceric extracts of Golden Seal root, Queen's root, Stone root, Black Cherry bark, Bloodroot and Mandrake root, and by special processes perfected by Dr. J. C. Pierce.

It is the most exact proportions, and their medicinal properties preserved without the use of alcohol as to render it a safe and effective remedy for use in the family without consulting a doctor. Young or old can take it freely as needed, and now that its composition is published, there is no ground for prejudice against it as a patent medicine or secret medicine. It is neither.

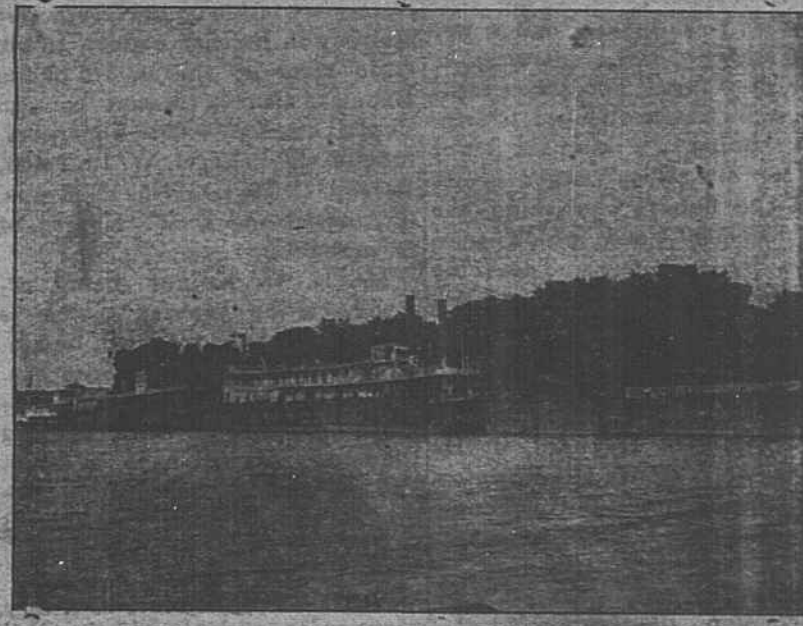
Dr. Pierce's Pleasant Pellets cure constipation. Constipation is the cause of many diseases. Cure the cause and you cure the disease. One "Pellet" is a gentle laxative, and two a mild cathartic. Dr. Pierce's great thousand-page Illustrated Common Sense Medical Adviser will be sent free, paper-bound, for 21 one-cent stamps, or cloth-bound for 51 stamps.

In response to call of County Superintendent, the Mason County Book Board consisting of J. L. Thorn, Chairman, C. A. Green, Secretary and H. T. Fry, Henry Gwinn, Walter McComb, J. C. Knopp, Eddie Riffle, C. D. Ball and J. P. Jones met February 12, and re-adopted the following books:

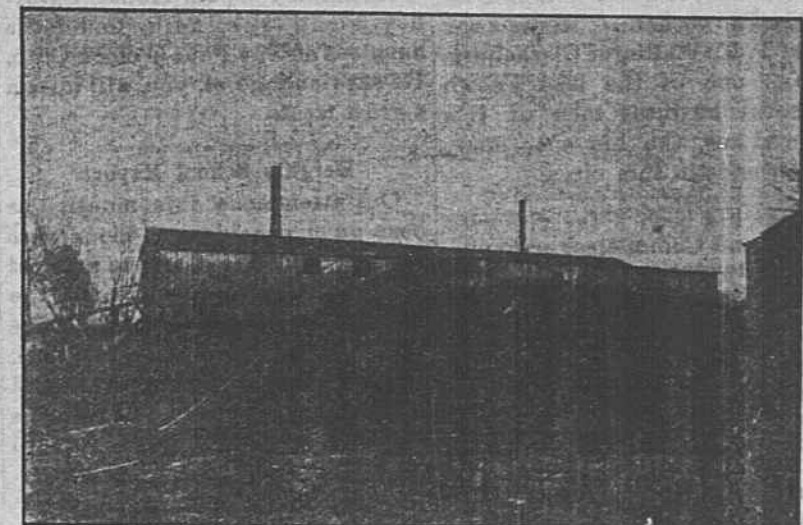
Mitchell's Geographies, Montgomery's Histories, Myer's General History, Lewis History and Government of West Virginia, Lippincott's Mental Arithmetic, Bryant and Stratton's Book-keeping. The board adopted Nation and State Civil Government in place of Facts in Civil Government. Also Blaisdell's physiologies in place of Cutler's. Practically no changes were made.

There! The ink bottle has been tipped over, right on the tablecloth. Don't get excited about it. Mix a little lemon juice with common salt, rub it well on the ink spot and wash it out. Then put the cloth out in the sunshine for awhile and wet the place with the liquid till the spot goes away.

## A Scene at the Enterprise Marine Dock Co.'s



Landing, in the Kanawha River at Point Pleasant, W. Va., two years ago, when the towboat Convoy was having a new hull built, and the towboat Geo. Gardner and packet boat Carrie Brown were being rebuilt. Mr. Geo. P. Gardner is the General Manager of this company.



A splendid view of the Enterprise Dock Co.'s large Saw and Planing Mill at the boat yard on the bank, near the company's docks, Point Pleasant, W. Va.

A professional oistern cleaner tells that at least once a year each housewife should put a cupful of common baking soda into the oistern. It not only kills all insect life that may be within the water, but renders it softer and better for all purposes, even for drinking. It will make cleaning unnecessary unless trash has been dropped into the oistern.

Some people go ahead and do things; others sit back idly and criticize the doing. Which class is of greater benefit to the world?

You've heard people say that they had "worked like a dog all day." An exchange has figured that if this were literally true, the twenty-four hours would be spent thus. One hour digging out a rat, two hours gnawing a bone, one hour waiting for a cat to come down from a tree, half an hour begging to get into the house and the balance of the time sleeping on a mat in the cold doorway.

Good words cost no more than bad.

## Let Him Fight Now.

One of Mr. Roosevelt's enthusiastic admirers says that while Mr. Roosevelt does not desire to become a candidate for another term "if duty demanded" he would "continue this fight." In other words, this admirer says that if it is necessary for Mr. Roosevelt to be a candidate for a third term in order to wage war against special interests, he will not shrink from the task.

That is all very interesting, to be sure. But Mr. Roosevelt is already in office. He has more than three years yet to serve. He is now possessed of all the power he would have after an election to a third term. Let him justify the confidence the people have shown in him by proceeding to exercise that power.

It will be time enough for Mr. Roosevelt's friends to talk about a third term when he shall have engaged in something more than a sham battle. We do not mean to say that every battle waged by Mr. Roosevelt has been on the sham order. But it cannot be denied that in many respects he has been a serious disappointment to those who have believed in him. The people are suffering from real evils and these must be met by real reforms. At least they must be met by serious and determined efforts at real reform. Investigations of beef trusts resulting, as Commissioner Garfield's investigation did, not only in the conclusion that there is no beef trust, but also in practically the surrender of the government's strong points in the prosecution, will neither provide the people with relief nor inspire them with confidence.—Bryan's Commonwealth.

## Free School Books.

The Kingwood Argus is in favor of free text books for the children of the state, and for the same set of books all over the state. In a recent issue it says:

"We hope the next legislature of this state will pass a free text book bill and make provision for furnishing school books free to the pupils of the common schools of the state, the books could be purchased much cheaper, and better books could be had. Of course the people would have to pay for them after all, and in a way that would be much easier and more equally adjusted. In other words, the rich man would have to help educate the poor man's children, and there will be no more complaint of the books changing so often and the extra cost, every time a change is made and the new books that have to be bought when people move from one county to another, as under the present system of county adoptions. The book publishing company can naturally furnish the books much cheaper when they can get a contract for the whole state at one time, and from one board, whereas now they have to send representatives to every county and city in the state see about nine members in each county."

## Where's The Difference

A company of men are seated around a table. In front of each man is a small stack of poker chips. They represent a certain value. The men are manipulating a set of cards 52 in number, in such a way that each is doing his best to win the collection of chips. The interest is deep and the cards are watched closely as they are played. This is gambling.

A company of ladies and gentlemen are seated around a table or several tables perhaps. Before the mind of each person is a prize or may be two of them. They represent a certain value. They are manipulating a set of cards 52 in number, in such a way that each is doing her best to win the prize. The interest is deep and the cards are watched closely as they are played. This is society.

For whom are you keeping your pretty china and silver and tablecloths? For people to quarrel over after you are gone? Why not use them and have a pretty and attractive looking table—pleasant place to come to and remember? The family will be more careful not to drop food on a clean white cloth than they would on an oilcloth; and it will be pleasanter work to wash pretty china than heavy stoneware, and pretty dishes can be cheaply bought nowadays. The only way to enjoy things is as you go along; but with many people it has become second nature to save and keep the best for some other time.

## \$33 TO THE PACIFIC COAST

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Tickets good in tourist sleeping cars. Rate for double berth, Chicago to Pacific coast points, only \$7. Through tourist cars to California leave Union Station, Chicago, at 10:25 p.m. daily. PERSONALLY CONDUCTED excursions at 10:25 p.m., Tuesdays and Thursdays. Buy your ticket from your local agent, but insist that it reads via the Chicago, Milwaukee & St. Paul Railway. For complete information, free, about rates, routes, tickets and reservations write today to

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